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LETTERS TO THE EDITOR

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Sir,

The clinical utility of arterialized earlobe capillary blood in the assessment of patients for long-term oxygen therapy (*Respir Med* 2001; 95: 655–660)

I read with interest this paper and I would like to raise three points, one of these points is very important and I think may have affected your results.

Under the results section, it was stated that the earlobe sample was collected in <30 sec in 45% of the samples, 40% took between 30 and 60 sec and 15% took more than 60 sec to collect. I think that your collection times were unacceptably extended and this may well have affected the PaO_2 result so that the samples were no longer 'real' arterialized samples.

We have been performing earlobe capillary samples for over 25 years now (please see reference number 12 listed in the paper) and we carry out about 4000 samples per annum in our unit. The instruction that I give to the staff in our unit is that if the sample is not collected within 10 sec then it should be discarded and another sample taken accordingly. I would be most interested to know if the data points on the graph that appear to be the most comparable are those from the samples that were collected in the shortest time?

The other point that I would like to mention relates to your comments in the methods, where you state that you used a lancet to stab the ear. What size lancet did you use? I know that we have previously made a comparison between a scalpel blade and a lancet. The blood flow from the earlobe using the scalpel blade was much faster than when using the lancet. Incidentally, we always use a number 15 scalpel blade (Swann–Morton) when taking our earlobe samples.

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Sir,

The clinical utility of arterialized earlobe capillary blood in the assessment of patients for long-term oxygen therapy (*Respir Med* 2001; 95: 655–660): reply to the letter from Dr Cramer

We thank Dr Cramer for his comments and acknowledge the longstanding expertise that his department has in this procedure. The strength of our study included the prospective rigorous systematic documentation of procedural and technical difficulties with both sampling methods, allowing us to document the clinical utility of this procedure. Reiterating again the absolute importance of optimizing arterialization and avoiding air bubbles, the time taken for collection is of course a further consideration which is why we chose to document it. The levels of agreement for the three collection times were as follows: <30 sec PaO_2 mean (± 2SD) $-0{\cdot}50$ ($-2{\cdot}07$–$1{\cdot}08$) kPa, 30–60 sec $-0{\cdot}48$ ($-2{\cdot}14$–$1{\cdot}18$) and >60 sec $-0{\cdot}36$ ($-1{\cdot}24$–$0{\cdot}52$). Hence the time taken to collect the specimen did not appear to influence the accuracy of the PaO_2 result. However this should not necessary negate the generally accepted view that the sample should be collected with expediency, although we are not aware that it is widely accepted that specimens are discarded if they are not collected within 10 sec. We did wonder whether your unit used a smaller collection system (eg 30–40μl),which would clearly impact significantly on the collection times. The query with respect to lancet size—we used Glucocard Easy-lets Lancets EL50 (21 gauge), which we felt allowed a more controlled flow in comparison with a scalpel. We would be interested in the levels of agreement your laboratory achieved when you compared lancet and scalpel blade as we are not aware of a published comparison.

However, our results in terms of accuracy were very comparable with recent published studies, which increases the confidence that this level of agreement is what is generally achieved. Clearly, arterialized earlobe sampling is a technique which is particularly vulnerable to operator and technical difficulties. As previously stated it would seem likely that lesser degrees of agreement might be expected in general clinical use unless strict attention is paid to quality assurance.

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